HYUNDAI WELDING

Rev. 05

Supershield 7

SELF-SHIELD FLUX CORED ARC WELDING CONSUMABLE
FOR MILD & 490MPa CLASS HIGH TENSILE STEEL

2020.12

HYUNDAI WELDING CO., LTD.

❖ Specification

AWS A5.20	E70T-7
(AWS A5.20M	E490T-7)

❖ Applications

Only Flat, H-Fillet welding of general fabrication, structural fabrication, machinery bases and heavy equipment repair, assembly welding.

❖ Characteristics on Usage

Supershield 7 is self-shield flux cored wire for high deposition rate flat and horizontal welding where impact properties are not required.

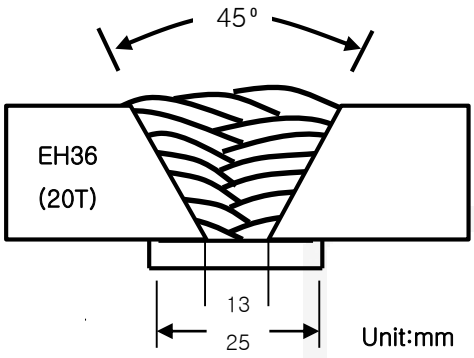
❖ Note on Usage

Do not use shielding gas

Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

Welding Position	:	1G(PA)
Diameter	:	2.0mm(5/64in)
Shielding Gas	:	None
Polarity	:	DC-
Amp./ Volt.	:	280 / 23
Stick-Out	:	35~40mm(1.4~1.6in)
Pre-Heat	:	R.T .
Interpass Temp.	:	150±15℃ (302±59°F)

❖ Mechanical Properties of all weld metal

Consumable	Tensile Test Tensile specimen artificially aged at 105℃ for 48hr, as permitted by AWS A5.20		
Supershield 7	YS MPa (lbs/in²)	TS MPa (lbs/in²)	EL(%)
	492(71,000)	635(92,000)	23.0
AWS A5.20 E70T-7	≥ **390** **(56,000)**	**490~670** **(70,000~97,000)**	≥ **22**

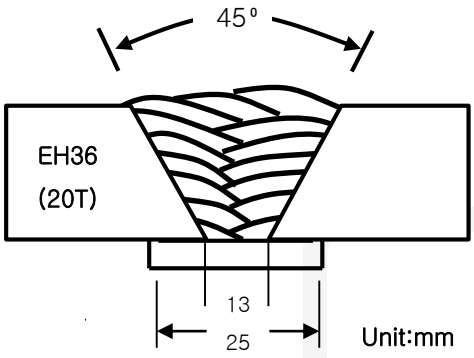
❖ Chemical Analysis of all weld metal(wt%)

Consumable	C	Si	Mn	P	S	Al
Supershield 7	0.265	0.17	0.25	0.011	0.005	1.54
AWS A5.20 E70T-7	≤ 0.30	≤ 0.60	≤ 1.75	≤ 0.03	≤ 0.03	≤ 1.80

Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

Welding Position	:	1G(PA)
Diameter	:	2.4mm(3/32in)
Shielding Gas	:	None
Polarity	:	DC-
Amp./ Volt.	:	300 / 23
Stick-Out	:	35~40mm(1.4~1.6in)
Pre-Heat	:	R.T .
Interpass Temp.	:	150±15℃ (302±59°F)

❖ Mechanical Properties of all weld metal

Consumable	Tensile Test Tensile specimen artificially aged at 105℃ for 48hr, as permitted by AWS A5.20		
Supershield 7	YS MPa (lbs/in²)	TS MPa (lbs/in²)	EL(%)
	504(73,000)	642(93,000)	23.4
AWS A5.20 E70T-7	≥ **390** **(56,000)**	**490~670** **(70,000~97,000)**	≥ **22**

❖ Chemical Analysis of all weld metal(wt%)

Consumable	C	Si	Mn	P	S	Al
Supershield 7	0.271	0.15	0.20	0.012	0.003	1.60
AWS A5.20 E70T-7	≤ 0.30	≤ 0.60	≤ 1.75	≤ 0.03	≤ 0.03	≤ 1.80

Welding Efficiency

❖ Deposition Rate & Efficiency

Consumable (Size)	Welding Conditions		Deposition Efficiency(%)	Deposition Rate kg/hr(lb/hr)
	Amp.(A)	Volt.(V)		
Supershield 7 2.4mm (3/32in)	250	21	77~79	3.5(7.7)
	300	23	78~80	5.8(12.7)
	350	24	79~81	6.9(15.2)
	400	26	80~82	9.4((20.7)
	450	28	82~84	11.8(25.9)
Remark			Deposition efficiency =(Deposited metal weight/ Wire weight used)×100	Deposition rate =(Deposited metal weight/ Welding time,min.)×60

Proper Welding Condition

❖ Proper Current Range

Consumable	Welding Position	Wire Diameter	Wire Dia.	
			Amp.	Volt.
Supershield 7	F & HF	2.0mm (5/64in)	200	20~22
			250	21~23
			300	22~24
			350	23~25
			400	24~26
		2.4mm (3/32in)	250	21~23
			300	23~25
			350	24~26
			400	26~28
			450	26~28

❖ F No & A No

F No	A No
6	-